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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,056	06/22/2005	Kazufumi Sato	SHIGA7.021APC	1274

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EXAMINER

CHU, JOHN S Y

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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08/08/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary	Application No. 10/540,056	Applicant(s) SATO ET AL.	
	Examiner JOHN S. CHU	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 6-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-20 is/are rejected.
- 7) ☒ Claim(s) 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/18/08, 6/6/08, 7/1/08, 7/17/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to the response filed April 30, 2008.

1. The provisional rejection on the ground of nonstatutory obviousness-type double patenting over copending application 10/865,040 is **withdrawn** in view of the proper terminal disclaimer received April 30, 2008.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, and 6-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over UETANI et al (6,627,381 B1) in view of NAKANISHI et al (2002/0164540)

The claimed invention is drawn to the following:

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1. **(Previously presented)** A positive resist composition comprising:
a resin component (A) containing an acid dissociable dissolution inhibiting group whose alkali solubility increases under action of acid; and
an acid generator component (B) that generates acid on exposure, wherein
the resin component (A) is a copolymer comprising a first structural unit (a1) derived from a hydroxystyrene and a second structural unit (a2) derived from a (meth)acrylate ester containing an alcoholic hydroxyl group, in which 10 mol% or more and 25 mol% or less of a combined total of hydroxyl groups within the structural units (a1) and alcoholic hydroxyl groups within the structural units (a2) are protected with the acid dissociable dissolution inhibiting groups,
a weight average molecular weight of the copolymer prior to protection with the acid dissociable dissolution inhibiting groups is 2,000 or more and 8,500 or less,
a molar ratio between the first structural units (a1) and the second structural units (a2) within the resin component (A) prior to protection with the acid dissociable dissolution inhibiting groups is within a range from 80:20 to 70:30,
the second structural unit (a2) is derived from a (meth)acrylate ester containing an adamantyl group with an alcoholic hydroxyl group, and
the acid dissociable dissolution inhibiting group is a 1-lower alkoxyalkyl group.

UETANI et al discloses a positive resist composition wherein the resin component is disclosed in Synthesis Example 2, in column 10, lines 23-39, to be a copolymer of 1-ethoxyethylated hydroxystyrene/3-hydroxy-1-adamantyl methacrylate. Here the resin is disclosed to have a content of 15% of the 1-ethoxyethylate groups to the benzene rings, which implies 15% of the hydroxyl groups on the benzene rings are substituted, thus meeting the claimed limitations of the recited copolymer. The reference further discloses the acid generating agent, and amine compound as seen in the Abstract.

The reference to UETANI et al lacks the claimed third monomer unit in a working example, however clearly teaches the use of the third monomer unit in column 5, lines 45-47. The suitable monomers include styrene, acrylonitrile, methyl methacrylate and methyl acrylate.

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The reference further lacks the disclosure for the claimed weight average molecular weight of 2,000 or more and 8,500 or less. Finally the reference lacks the recited polydispersity as recited in claim 7 of 2.0 or less. The Synthesis example 1 discloses the resin to have a polydispersity of 2.19.

NAKANISHI et al (2002/0164540) discloses a resin comprising a hydroxystyrene/ethyl-adamantyl methacrylate wherein the resin has a Mw of 8200 see Synthesis Example (2b) page 5 paragraph [0093] wherein the degree of dispersion is 1.68. The reference lacks a methacrylate ester having the claimed alcoholic hydroxyl group.

It would have been *prima facie* obvious to one of ordinary skill in the art of positive photoresist compositions to use copolymer having a weight average molecular weight between 5,000 – 8,500 in view of NAKANISHI et al and having a polydispersity of 1-3 based on the disclose degree of dispersion in NAKANISHI et al and reasonably expect same or similar results as recited in UETANI et al for a photoresist composition which is excellent in sensitivity, resolution and dry etch resistance.

Comparative examples using the Examples in UETANI et al, namely, Synthesis Example 1 would be helpful as to overcoming any *prima facie* case of obviousness.

4. Claims 21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The claims recite the Mw of the resin to be 4, 000 to 8,000 which is outside the disclosed ranges of the prior art references of record.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/John S. Chu/
Primary Examiner, Art Unit 1795

J.Chu
August 2, 2008